

Project Fact Sheet

Utilization of Waste Renewable Fuels in Boilers with Minimization of Pollutant Emissions

GOAL

- To develop and optimize a process, using CCG technology, which converts biomass/waste into gaseous fuel for use as supplementary fuel and NO_x control in California biomass boilers.



PROJECT DESCRIPTION

The overall goal of this project is to develop a preliminary conceptual design for a full-scale demonstration facility of Close-Coupled Gasification (CCG) technology. The design would retrofit (couple) CCG technology in a California biomass power plant to reduce NO_x emissions by using gasified, low-grade biomass/waste fuel.

This project is Phase I of a four-phase CCG technology commercialization plan. If analyses performed under this project prove the project would be technically and economically feasible, the project developers may decide to design, retrofit and operate the demonstration facility (Phases II and III) and to commercialize the technology throughout California and elsewhere (Phase IV).

This project develops an innovative technology, Close-Coupled Gasification (CCG), which is a synergistic combination of direct combustion, biomass/waste gasification, and GE EER's emission control approaches to be applied in existing California biomass boilers.

The CCG technology will also help to solve the existing problems of the biomass power industry in California. The continued survival of the biomass power industry greatly depends on the expansion of availability of diverse, low-cost fuel sources, and this project develops specific feedstocks to be used in combined combustion/gasification mode.

The specific technical performance objectives are to design a demonstration facility, which is capable of:

- producing 10-30% of gaseous fuel (by heat input) for a 25 MW biomass boiler.
- reducing NO_x emissions up to 65% in basic reburning and 90% in advanced reburning (AR).
- complying with all other California emissions standards.

The specific economic performance objective is to:

- reduce NO_x control costs by at least 20%, compared to the costs of existing NO_x control methods used by biomass boilers owned by Wheelabrator Shasta/Hudson Energy Company, Woodland Biomass, and Wadham Energy.

BENEFITS TO CALIFORNIA

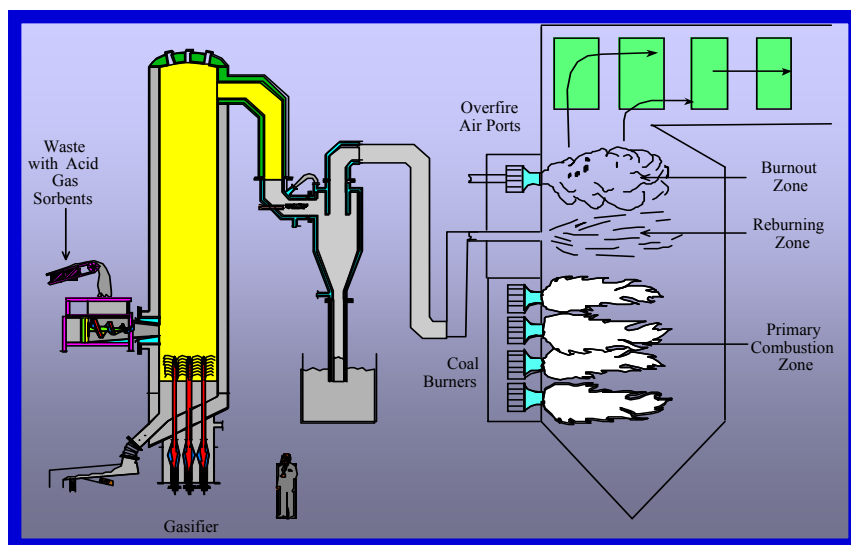
- CCG technology will help to solve the existing problems of the biomass power industry in California.
- CCG technology focuses on bringing the renewable energy, energy supply reliability, energy price stability and the protection of the environment to the California marketplace.
- Reducing environmental risks and costs of California's electricity by developing a lower-cost method for existing, biomass power plants to control NO_x and other pollutant emissions
- Production of gaseous fuel to be used as supplementary cofiring / reburning fuel for California Biomass Boilers.

FUNDING AMOUNT

Commission	\$ 981,952
Match	\$ 610,238
Total	\$1,592,190

PROJECT STATUS

Ongoing. Several reports on testing and modeling efforts have been completed. A paper was presented at the two conferences in Japa and Idaho. This project is scheduled for completion in December 2002.



FOR MORE INFORMATION

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